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for Recon
J. Steptoe

PATENT APPLICATION 11-16-01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE 15 2001

TECHNOLOGY CENTER 2800

In re the Application of

Toshiaki HASHIZUME et al.

Application No.: 09/214,519

Filed: January 7, 1999



Group Art Unit: 2858

Examiner: E. LeRoux

Docket No.: 101850

For: OPTICAL MODULATION ELEMENT
AND PROJECTION DISPLAY DEVICE

REQUEST FOR RECONSIDERATION

Director of the U.S. Patent and Trademark Office
Washington, D.C. 20231

Sir:

In reply to the Office Action mailed May 21, 2001, reconsideration of the above-identified application is respectfully requested.

Claims 1-19 are pending. Reconsideration based on the following remarks is respectfully requested.

I. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

The Office Action maintains the rejection of claims 1, 2, 4 and 6-9 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 5,508,834 to Yamada et al.; claims 14-16 under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,007,205 to Fujimori; claim 5 under 35 U.S.C. §103(a) as unpatentable over Yamada in view of U.S. Patent No. 5,865,521 to Hashizume et al.; claims 3 and 10 are rejected under 35 U.S.C. §103(a) as unpatentable over Yamada in view of U.S. Patent No. 5,212,573 to Yamazaki et al.; claims 11-13 under 35 U.S.C. §103(a) as unpatentable over Yamada in view of U.S. Patent No. 5,868,485 to Fujimori et al.; claim 17 is rejected under 35 U.S.C. §103(a) as unpatentable over Fujimori in

view of Yamazaki; and claims 18 and 19 are rejected under 35 U.S.C. §103(a) as unpatentable over Yamada in view of U.S. Patent No. 5,260,730 to Williams. The rejections are respectfully traversed.

Applicants respectfully submit that Yamada does not disclose or suggest an optical modulation device, and a transparent plate formed on at least one surface of the optical modulation device, as recited in amended claim 1.

Instead, the liquid crystal 5 of Yamada is not an optical modulation device, and does not even comprise a surface wherein a transparent plate is formed thereon. Additionally, the Office Action refers to the liquid crystal 5 of Yamada as "an optical modulation element[Fig. 5, #5]." See Office Action, page 2, lines 9-10.

The Office Action further refers to col. 3 of Yamada, where it is indicated that Fig. 5 is a schematic cross-sectional view showing a liquid crystal display device where a liquid crystal 5 is held in a gap between substrates 2 and 3. Thus, as disclosed in this portion of Yamada, the liquid crystal 5 of Yamada is not an optical modulation device, but a liquid inserted in the gap between substrates 2 and 3. That is, the liquid crystal 5 does not even comprise a surface wherein a transparent plate is formed thereon.

Additionally, as disclosed in this portion of Yamada, the liquid crystal 5 is not an optical modulation device because the entire device in Fig. 5 is disclosed by Yamada as a liquid crystal device. See col. 3, lines 58-60 of Yamada, for example. However, the entire device in Fig. 5 is not an optical modulation device having a transparent plate formed on at least one surface of the optical modulation device, as recited in claim 1. Rather, as shown in Fig. 5 of Yamada, transparent substrates 2 and 3 are provided within the liquid crystal device.

Furthermore, Yamada does not disclose or even suggest a transparent plate formed on an optical modulation device. As discussed above, Yamada does not even disclose a liquid crystal device having a surface.

The Office Action asserts that Yamada "teaches a transparent plate [Fig. 5, 6 and 7]." However, as discussed above, the liquid crystal device shown in Fig. 5 does not have any transparent plate formed on the device. Rather, the cover members 6 and 7 referred by the Examiner are formed within the liquid crystal device.

Because Yamada does not disclose a transparent formed on at least one surface of the optical modulation device, it cannot provide advantages of the claimed invention. For example, Yamada does not provide the advantage of preventing heat from being directly transmitted to the optical modulation device. Thus, it is possible to prevent the optical properties of the optical modulation device from deteriorating due to the heat generation of the polarizer. Additionally, the transparent plate can prevent light reflection at the interface surface between the optical modulation device and air because of the difference in refractive index and there between. This makes it possible to prevent the optical properties of the optical modulation device from deteriorating due to surface reflection. Other advantages of the claimed invention are described at pages 5 and 6 of the specification.

However, the structure of Yamada is completely devoid of these advantage. The fact that the structure of Yamada is devoid of these advantages shows that it would not be obvious to one of ordinary skill in the art to modify its disclosure to make up for the deficiencies in Yamada discussed above. Specifically, if it had been obvious to one of ordinary skill in the art to modify Yamada to make up for the deficiencies discussed above, then one of ordinary skill in the art would have done so to attain these advantages. However, no such disclosures have been found that show the claimed invention.

With respect to the rejection of claims 14-16, Fujimori does not disclose a partition that surrounds the plurality of optical modulation devices and the prism, the partition having a transparent plate fitted in a light incident window corresponding to a light incident surface of the at least one optical modulation device, as claimed in claim 14.

Instead, Fujimori discloses light valves 925 R, G and B and a prism unit 910. The polarizing plate 981-983 are enclosed by dust proof box 1500. Square openings 1501-1053 are provided in the three side walls of the box 1500 to which light is incident. Each of the openings 1501-1503 is closed in an air tight state by means of polarizing plates 981-983 fastened to the side wall from the inside thereof. The side of dust proof box 1500 from which light is emitted is open.

Thus, Fujimori does not disclose the features recited in claims 14-16.

With respect to the rejection of claims 18 and 19, Applicants submit that Yamada does not disclose or suggest a transparent plate formed on a light emitting surface of the optical modulation device, as recited in amended claim 18. As discussed above the liquid crystal 5 is not an optical modulation device, and does not even comprise a surface wherein a transparent plate is formed thereon.

Moreover, Williams does not disclose or suggest the feature of claim 18 missing from Yamada. In fact, Williams does not disclose or suggest any transparent plate formed on a light emitting surface of an optical modulation device. Thus, even if combined, Yamada and Williams do not disclose or suggest the features of claim 18.

Yamada also does not disclose or suggest an optical modulation device, and a partition that surrounds the optical modulation device, as recited in amended claim 19.

Moreover, Williams does not disclose or suggest the feature of claim 19 missing from Yamada. As discussed above, Williams does not disclose or suggest any partition. Thus, even if combined, Yamada and Williams do not disclose or suggest the features of claim 19.

For at least these reasons, it is respectfully submitted that claims 1, 4, 14, 18 and 19 are distinguishable over the applied art. Claims 2-3, 5-13 and 15-17 which depend from claims 1, 4, 14, 18 and 19, are likewise distinguishable over the applied art for at least the

reasons discussed as well as for the additional features they recite. Withdrawal of the rejection under 35 U.S.C. §102 and §103 is respectfully requested.

II. CONCLUSION

In view of the foregoing Remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact the Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,



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JAO:KMM/rrs

Date: November 9, 2001

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